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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,002	02/13/2002	David M. Lewin	SMFI 3.0-001	7149

530 7590 12/23/2003

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EXAMINER	
OJINI, EZIAMARA ANTHONY	
ART UNIT	**PAPER NUMBER**
3723	5

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

CS

Office Action Summary	Application No.	Applicant(s)	
	10/075,002	LEWIN ET AL.	
	Examiner	Art Unit	
	Anthony Ojini	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21-38* is/are allowed.

6)☒ Claim(s) *1,4,5,9,12 and 17* is/are rejected.

7)☒ Claim(s) *2,3,6-8,10,11,13-15,18-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5, 9,12,17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erichsen et al. (5,643,058) in view of Carpenter, Jr. (3,629,976).

With respect to claims 1,9, Erichsen et al. disclose fluid jet cutting system comprising a storage assembly (12) containing abrasive particulate material (18), said the storage assembly including inlet (14), for allowing the abrasive particulate material to flow therein, an outlet (32) for allowing the abrasive particulate material to flow therefrom; a fluid supply source (11) in communication with the storage assembly wherein the abrasive particulate material is mixed with a predetermined amount of liquid (see fig. 3A). Erichsen et al. also disclose means (58) having a rod (56) coupled to a stopper (60) being selectively raised to a first position (62) and lowered to a second position (64) for controlling the flow of abrasive particulate through the outlet.

Erichsen et al. fail to disclose an inflatable diaphragm arranged at the outlet wherein the inflatable diaphragm is selectively inflated and deflated so as to control the flow of the abrasive particulate material through the outlet.

Carpenter, Jr. discloses a flexible diaphragm (30) for controlling the flow of abrasive particulate through the outlet (col. 2, lines 59-73).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Erichsen et al. with diaphragm arrange at the outlet wherein the diaphragm is being selectively flexed to a first position and a second position in view of Carpenter so as to control the flow of the abrasive particulate material through the outlet.

With respect to claim 4, Erichsen et al. disclose a nozzle (54) connected to a liquid supply source wherein the abrasive particulate material and liquid are dispersed from the nozzle at a predetermined pressure (see figs. 1,3A).

With respect to claims 5,12, Erichsen et al. disclose the storage assembly comprises an upper housing that retaining at least a portion of outlet, and a lower housing connected to the upper housing, said the upper housing and lower housing having a passageway therein for permitting abrasive particulate material to flow therethrough (see fig. 2).

With respect to claim 17, Erichsen et al. disclose method of controlling a flow of abrasive particulate material in a fluid jet cutting system comprising the following step: retaining abrasive particulate material (18) in a storage container (12);

selectively raising a device means having a rod (56) coupled to a stopper (60) being selectively raised to a first position (62) and lowered to a second position (64) for controlling the flow of abrasive particulate through the outlet said the storage container;

mixing the abrasive particulate material with a fluid so that a desired ratio of abrasive particulate material to liquid is created; and

permitting the abrasive particulate material to flow with the liquid through a nozzle (54) of the fluid jet cutting apparatus, thus creating an abrasive stream that abrades a target object.

Erichsen et al. fail to disclose step of selectively inflating a diaphragm arranged at an outlet of a storage vessel to preclude the abrasive particulate material from flowing therethrough; and selectively deflating a diaphragm to permit the abrasive particulate material to flow through the outlet.

Carpenter, Jr. discloses a flexible diaphragm (30) for controlling the flow of abrasive particulate through the outlet (see col. 2, lines 59-73).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Erichsen et al. with diaphragm arrange at the outlet wherein the diaphragm is being selectively slide to a first position and a second position in view of Carpenter so as to control the flow of the abrasive particulate material through the outlet.

Allowable Subject Matter

Claims 21-38 over allowed over prior art.

Claims 2,3,6-8,10,11,13-16,18-19,20 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the art of record considered as a whole, alone or in combination, neither anticipates nor renders obvious a water jet cutting system comprising a computer numeric control system and a pressurized air supply source operatively connected to the inflatable diaphragm (26) for selectively inflating and deflating so as to control the flow of the abrasive particulate material through the outlet; an over inflation guard block (28) connected to the upper housing (44) and arranged at the outlet (24) to prevent over expansion of the inflatable diaphragm; and a regulation device (54) arranged between the upper and lower housing so as to regulate the amount of abrasive particulate material permitted to flow through the outlet.

Response to Amendment

Applicant's arguments filed 11/26/03 have been fully considered but they are not persuasive.

Applicant argues that the U.S. Patent No. 3,629,976 to Carpenter, Jr. "it is clear that the diaphragm 30 of Carpenter is not adjacent to the outlet 18 while the diaphragm 26 of the present invention clearly is". However, the diaphragm 30 of Carpenter is not adjacent to the outlet 18 because in Webster's dictionary, ADJACENT is defined as **Close to**; and **Next to**.

Applicant argues that "in Carpenter where the diaphragm is only in the general vicinity of the outlet, but is not itself situated to selectively block the flow of abrasive material

through the outlet". However, Carpenter, Jr. discloses the concept of a flexible diaphragm for controlling the flow of abrasive particulate through the outlet.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 703 305 3768. The examiner can normally be reached on 7.30 to 5.00 Tue-Fri with every other Mon. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703 308 2687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1148.

Joseph J. Hail, III
Supervisory Patent Examiner
Technology Center 3700

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December 17, 2003